AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An optical information recording and reproducing apparatus which records information by emitting a laser beam that is modulated according to recording data to a recording medium, said apparatus comprising:

a laser light source ~~which emits~~ operable to emit a laser beam to a recording medium;

a recording pulse generator ~~which generates~~ operable to generate recording pulse signals so as to modulate an optical intensity of the laser light source according to recording data;

a laser driver ~~which drives~~ operable to drive said laser light source according to the recording pulse signals generated by said recording pulse generator;

a photodetector ~~which detects~~operable to detect the laser beam emitted by said laser light source;

a sampler ~~which samples~~operable to sample an output signal of said photodetector; and

a sampling timing generator ~~which generates~~ operable to generate a sampling timing to instruct sampling to said sampler;

wherein said sampling timing generator ~~generates~~ is operable to generate a sampling timing which is delayed ~~at least~~ by at least a response time of a propagation path including said laser driver, said laser light source and said photodetector.

2. (Currently Amended) The optical information recording and reproducing apparatus according to claim 1, wherein said sampling timing generator ~~generates~~ is operable to generate a sampling timing for a record mark having a length which is longer than a sum of a settling time of a signal propagating the propagation path and a necessary acquisition time and a necessary aperture time of said sampler.

3. (Currently Amended) The optical information recording and reproducing apparatus according to claim 1, further comprising a laser power controller ~~which~~

~~controls~~ operable to control the power of said laser light source according to an output signal of said sampler.

4. (Currently Amended) The optical information recording and reproducing apparatus according to claim 1, further comprising a voltage monitor device ~~which monitors~~operable to monitor a power supply voltage of at least one of said laser driver, said laser light source, said photodetector and said sampler,

wherein said sampling timing generator ~~changes~~ is operable to change a sampling timing according to the power supply voltage monitored by said voltage monitor device.

5. (Currently Amended) The optical information recording and reproducing apparatus according to claim 1, further comprising a temperature monitor device ~~which monitors~~operable to monitor a temperature of at least one of said laser driver, said laser light source, said photodetector and said sampler,

wherein said sampling timing generator ~~changes~~ is operable to change a sampling timing according to the temperature monitored by said temperature monitor device.

6. (Currently Amended) The optical information recording and reproducing apparatus according to claim 1, further comprising a test pulse generator ~~which outputs~~operable to output a test pulse signal to said laser driver, and a measurement unit ~~which measures~~ operable to measure a response time of a test pulse signal until the test pulse signal propagates through the propagation path and is detected by said sampler as a sampled signal,

wherein said sample timing generator ~~determines~~ is operable to determine a sampling time according to the response time measured by said measurement unit.

7. (Currently Amended) An optical information recording and reproducing apparatus which records information by emitting a laser beam that is modulated according to recording data to a recording medium, said apparatus comprising:

a laser light source ~~which emits~~operable to emit a laser beam to a recording medium;

a recording pulse generator ~~which generates~~ operable to generate recording pulse signals so as to modulate an optical intensity of said laser light source according to recording data;

a laser driver ~~which drives~~operable to drive said laser light source according to the recording pulse signals generated by said recording pulse generator;

a photodetector ~~which detects~~operable to detect the laser beam emitted by said laser light source and reflected by ~~a~~ the recording medium;

a sampler ~~which samples~~operable to sample an output signal of said ~~detector~~photodetector; and

a sampling timing generator ~~which generates~~operable to generate a sampling timing to instruct sampling to said sampler;

wherein said sampling timing generator ~~generates~~ is operable to generate a sampling timing which is delayed ~~at least~~ by at least a response time of a propagation path including said laser driver, said laser light source and said photodetector.

8. (Currently Amended) The optical information recording and reproducing apparatus according to claim 7, wherein said sampling timing generator ~~generates~~ is operable to generate a sampling timing for a record mark having a length which is longer than a sum of a settling time of a signal propagating the propagation path and a necessary acquisition time and a necessary aperture time of said sampler.

9. (Currently Amended) The optical information recording and reproducing apparatus according to claim 7, wherein said sampling timing generator ~~changes~~ is operable to change a sampling timing according to a type of the recording medium.

10. (Currently Amended) The optical information recording and reproducing apparatus according to claim 7, further comprising a laser power controller ~~which controls~~operable to control a power of said laser light source according to an output signal of said sampler.

11. (Currently Amended) The optical information recording and reproducing apparatus according to claim 7, further comprising a servo error detector ~~which provides~~operable to provide a servo error signal by using an output signal of said sampler, and a servo device ~~which converges~~ operable to converge the laser beam to a track in the recording medium by using the servo error signal provided by said servo error detector.

12. (Currently Amended) The optical information recording and reproducing apparatus according to claim 7, further comprising a recording clock reproducing device ~~which reproduces~~operable to reproduce recording clock signals by using an output signal of said sampler.

13. (Currently Amended) The optical information recording and reproducing apparatus according to claim 7, further comprising a voltage monitor device ~~which monitors~~operable to monitor a power supply voltage of at least one of said laser driver, said laser light source, said photodetector and said sampler,

wherein said sampling timing generator ~~changes~~ is operable to change a sampling timing according to the power supply voltage monitored by said voltage monitor device.

14. (Currently Amended) The optical information recording and reproducing apparatus according to claim 7, further comprising a temperature monitor device ~~which monitors~~ operable to monitor a temperature of at least one of said laser driver, said laser light source, said photodetector and said sampler,

wherein said sampling timing generator ~~changes~~ is operable to change a sampling timing according to the temperature monitored by said temperature monitor device.

15. (Currently Amended) The optical information recording and reproducing apparatus according to claim 7, further comprising a test pulse generator ~~which outputs~~operable to output a test pulse signal to said laser driver, and a measurement unit which measures a response time of a test pulse signal until the test pulse signal

propagates through the propagation path and is detected by said sampler as a sampled signal,

wherein said sample timing generator ~~determines~~ is operable to determine a sampling time according to the response time measured by said measurement unit.

16. (Currently Amended) An optical information recording and reproducing apparatus which records information by emitting a laser beam that is modulated according to recording data to a recording medium having pits formed thereon as address information for managing a data position, said apparatus comprising:

a laser light source ~~which emits~~operable to emit a laser beam to a track in a recording medium for recording data;

a recording pulse generator ~~which generates~~ operable to generate recording pulse signals so as to modulate an optical intensity of said laser light source according to the recording data on recording;

a laser driver ~~which drives~~ operable to drive said laser light source according to the recording pulse signals generated by said recording pulse generator;

a photodetector ~~which detects~~ operable to detect the laser beam emitted by said laser light source and reflected by the recording medium;

a first binarizer ~~which binarizes~~operable to binarize an output signal of said photodetector with a first slicing level;

a second binarizer ~~which binarizes~~ operable to binarize an output signal of said photodetector with a second slicing level;

a selector ~~which selects~~ operable to select one of a first output signal of said first binarizer and a second output signal of said second binarizer;

a selection signal generator ~~which generates~~ operable to generate a selection signal so as to instruct said selector which one of the first and second output signals to select; and

a reproducing device ~~which reproduces~~operable to reproduce address information by using an output signal of said selector;

wherein said selection signal generator ~~generates~~ is operable to generate a timing of the selection signal according to a response time of a propagation path including said

laser driver, said laser light source, said photodetector, and said first and second binarizers.

17. (Currently Amended) The optical information recording and reproducing apparatus according to claim 16, further comprising a voltage monitor device ~~which monitors~~operable to monitor a power supply voltage of at least one of said laser driver, said laser light source, said photodetector, said first and second binarizers, and said selector,

wherein said ~~sampling timing~~ selection signal generator ~~changes~~ is operable to change a timing of the selection signal according to the power supply voltage monitored by said voltage monitor device.

18. (Currently Amended) The optical information recording and reproducing apparatus according to claim 16, further comprising a temperature monitor device ~~which monitors~~operable to monitor a temperature of at least one of said laser driver, said laser light source, said photodetector, said first and second binarizers, and said selector,

wherein said ~~sampling timing~~ selection signal generator ~~changes~~ is operable to change a timing of the selection signal generated by said selection signal generator according to the temperature monitored by said temperature monitor device.

19. (Currently Amended) A method of recording optical information ~~recording~~ by emitting a laser beam ~~by~~ with a laser light source to a recording medium, the laser beam having an intensity that is modulated according to recording data, ~~the~~ said method comprising ~~the steps of~~:

applying a recording pulse to the laser light source so as to emit a pulse light beam according to the applied recording pulse;

detecting a light quantity of the emitted pulse light beam;

~~sample~~sampling-and-holding the detected light quantity according to a sampling pulse so as to detect an optical intensity of the laser beam;

wherein the timing of the sampling pulse is delayed ~~at least~~ by at least a response time of a recording pulse in a propagation path from ~~application~~ said applying of the

recording pulse until just before ~~sample~~sampling-and-holding ~~it~~ the recording pulse, and the timing of the sampling pulse is generated for a recording mark having a length which is longer than a sum of a necessary acquisition time and a necessary aperture time for sampling.

20. (Currently Amended) The method according to claim 19, wherein a following relationship is satisfied:

$$tx > Td + Ts,$$

wherein tx denotes a time between ~~application~~ said applying of the recording pulse and a start of the sampling timing, Td denotes a delay time on forming a recording mark, and Ts denotes a settling time of the propagation path.

21. (Currently Amended) The method according to claim ~~18~~19, wherein a following relationship is satisfied:

$$n > \{Ts + Tw + Ta\}*f,$$

wherein n denotes a shortest length of a recording mark or space for which the sampling pulse is outputted, Ts denotes a settling time of the propagation path, Tw denotes a width of sampling pulse, ~~and~~ Ta denotes an aperture time on sample-and-holding, and f ~~denoted~~ denotes a recording frequency.

22. (Currently Amended) A method of recording optical information ~~recording~~ by emitting a laser beam ~~by~~ with a laser light source to a recording medium, the laser beam having an intensity that is modulated according to recording data, ~~the~~ said method comprising ~~the steps of~~:

applying a recording pulse to the laser light source so as to emit a pulse light beam to the recording medium according to the applied recording pulse;

detecting a light quantity of the pulse light beam reflected from the recording medium;

~~sample~~sampling-and-holding the detected light quantity according to a sampling pulse so as to detect an optical intensity of the laser beam;

wherein the timing of the sampling pulse is delayed ~~at least~~ by at least a response time of a recording pulse in a propagation path from ~~application~~ said applying of the recording pulse until just before ~~sample~~sampling-and-holding ~~it~~the recording pulse, and the timing of the sampling pulse is generated for a recording mark having a length which is longer than a sum of a necessary acquisition time and a necessary aperture time for sampling.

23. (Currently Amended) The method according to claim 22, wherein a following relationship is satisfied:

$$ty > \{Td + (Ts2 + Tm2)1/2\},$$

wherein ty denotes a time between ~~application~~ said applying of the recording pulse and a start of the sampling timing, Td denotes a delay time on forming a recording mark, and Ts denotes a settling time of the propagation path.

24. (Currently Amended) The method according to claim 22, wherein a following relationship is satisfied:

$$m > \{(Ts2 + Tm2)1/2 + Tw + Ta\}*f,$$

wherein m denotes a shortest length of a recording mark or space for which the sampling pulse is outputted, Ts denotes a settling time of the propagation path, Tm denotes a delay time on forming a recording mark, Tw denotes a width of the sampling pulse, Ta denotes an aperture time on sample-and-holding, and f ~~denoted~~ denotes a recording frequency.

25. (Previously Presented) The method according to claim 22, wherein the timing of the sampling pulse is changed according to a type of the recording medium.